July 20, 2007

Mr. Gordon Bischoff, Manager
Owners Group Program Management Office
Westinghouse Electric Company
P.O. Box 355
Pittsburgh, PA 15230-0355

SUBJECT: REQUEST FOR ADDITIONAL INFORMATION RE: PRESSURIZED WATER REACTOR OWNERS GROUP (PWROG) TOPICAL REPORT (TR) BAW-2308, REVISION 2, "INITIAL RT_{NDT} OF LINDE 80 WELD MATERIALS (TAC NO. MD4241)

Dear Mr. Bischoff:

By letter dated February 5, 2007 (Agencywide Documents Access and Management System Accession No. ML070430445), the PWROG submitted for U.S. Nuclear Regulatory Commission (NRC) staff review TR BAW-2308, Revision 2, “Initial RT_{NDT} of Linde 80 Weld Materials.” Upon review of the information provided, the NRC staff has determined that additional information is needed to complete the review. On July 16, 2007, Ms. Christine DiMuzio, Project Manager, Licensing Subcommittee, and I agreed that the NRC staff will receive your response to the enclosed Request for Additional Information (RAI) questions by August 31, 2007. If you have any questions regarding the enclosed RAI questions, please contact me at 301-415-1053.

Sincerely,

/RA/

Holly D. Cruz, Project Manager
Special Projects Branch
Division of Policy and Rulemaking
Office of Nuclear Reactor Regulation

Project No. 694

Enclosure: RAI questions

cc w/encl: See next page

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ADAMS ACCESSION NO.: ML071900201 **NRR-106**

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DATE	7/18/07	7/19/07	7/20/07

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REQUEST FOR ADDITIONAL INFORMATION

BY THE OFFICE OF NUCLEAR REACTOR REGULATION

TOPICAL REPORT (TR) BAW-2308-NP, REVISION 2

"INITIAL RT_{NDT} OF LINDE 80 WELD MATERIALS"

PRESSURIZED WATER REACTOR OWNERS GROUP (PWROG)

PROJECT NO. 694

1. Loading rate effect on the reference temperature, T_0, is discussed in Section 3 of TR BAW-2308, Revision 2. It states on Page 10, "Using the above equations [(the proposed American Society for Testing and Materials (ASTM) E1921 equations)] to adjust the loading rates of the five data sets that were tested faster than 2 Mpa√m/s to the limit of 2 Mpa√m/s, results in a reduction of 0.9 °F in T_0. This model predicts a loading rate effect of 13.3 °F on T_0 from the slowest to the fastest loading rate extremes shown in Table 5, while the AREVA model predicts an effect of 22.9 °F."

   - Provide information regarding the calculation of the reduction of 0.9 °F in T_0 as a result of adjusting the loading rate to 2 Mpa√m/s for the five data sets mentioned in the quote. Explain the use of this reference loading rate of 2 Mpa√m/s here for the five data sets, while both the TR BAW-2308 and the proposed ASTM E1921 use a reference loading rate of 1 Mpa√m/s to derive their adjusted T_0 values. Further, "loading rate extremes shown in Table 5," which is part of the above quote, should be revised to "loading rate extremes shown in Table 4."

   - Provide information regarding the calculation of the loading rate effect of 13.3 °F on T_0 using the proposed ASTM E1921 equations and the effect of 22.9 °F on T_0 using the TR BAW-2308 model. Table 4-3 of TR BAW-2308, Revision 1, does not support the stated effect of 22.9 °F on T_0. Please clarify that this calculation is based on T_0 values for all data sets shown in Table 4, not just the five data sets.

2. There is inconsistent information on Pages 5, 6, 7, and 13 regarding the number of additional data that was used in the proposed analysis.

   - It state on Page 5 that, "Two 0.394 TC(T), four 0.500 TC(T), and two 0.936 TDC(T) specimens also from SA-1135 with an average fluence of 1.368×10^{19} n/cm^2 (E > 1 MeV) were also tested per ASTM E1921-02." Table 2 (Page 6) and Table 3 (Page 7) show, however, that there are three irradiated 0.936 DC(T) specimens from SA-1135. Please clarify the number of the 0.936 DC(T) specimens.

   - Table 7 (Page 13) uses the following wording to describe the revised sample size of the Linde 80 weld for Heat 299L44: "299L44 with 8 added tests from TMI2-LG2." This suggests that results from eight additional specimens are included in the proposed sample size uncertainty analysis. However, the Table 7 data show that the uncensored specimen number for 299L44 for the corresponding TR BAW-2308, Revision 1, analysis was 22 and the uncensored specimen number for 299L44 for the proposed analysis is 29, suggesting that seven additional uncensored specimens are included in the

ENCLOSURE

proposed analysis. Please confirm that one of the 8 added specimens is censored, and it is not used in any data analyses described in TR BAW-2308, Revision 2.

3. It states on Page 11 that the "Monte Carlo analyses were performed using the same procedure described in BAW-2308," suggesting that the results shown in Table 6 (Page 12) are based on all the specimens. Please confirm that the entire specimen set used in the analysis consists of 314 existing specimens, 8 added specimens for Heat 299L44, and 7 added specimens for Heat 61782. The sample size uncertainty shown in Table 7 (Page 13) indicates that the sample uncertainty results are based on uncensored specimens, i.e., 249 existing specimens and 14 added specimens. Provide the basis for this inconsistent approach of using different data sets for the Monte Carlo and sample size uncertainty analyses.

cc:
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